Maintaining Your New California Garden: Life-friendly Fall Pruning

Mother Nature's Backyard in November: illustrating life-friendly fall pruning. Late fall and early winter are important prun...

Saturday, October 14, 2017

Heat Waves, Shade and Your Health

We've experienced some dramatic heat waves this summer. Temperature records continue to be broken, particularly in the far West. And heat is not just uncomfortable, it can actually affect your health. That's why it's time for Western gardeners to start taking the subject of shade seriously.

The Southern and Eastern coasts have their hurricanes and floods; the Midwest it's tornadoes (and floods). In the West we have our droughts, wildfires – and heat. Each region experiences extreme weather that can make life miserable, destroy property and yes, kill. So, we need to prepare for extreme weather.

And the situation isn't likely to get any better. In fact, we can expect to experience weather extremes more often in the future. We are already seeing these effects of climate change in every part of the globe, including California. That's why *planning for extreme heat* is important for gardeners throughout the West. And the time to plan – and act – is *NOW*.

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Heat Waves, Shade and Your Health

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Native live oaks provide cool, dry shade

California's natural areas can teach us valuable lessons about surviving heat. Visit a nature preserve or forest on a hot, dry day to directly experience the dramatic difference between sunny areas and nearby shade under trees. The temperature difference can be as great as 10-15 degrees Fahrenheit (5.5 to 8.3 degrees C.) between the two. The shade beneath trees is often at least 5 degrees cooler than even the shade produced by man-made structures (porches; canopies).

Why is it cooler in the shade beneath trees? There are several processes at work. First, the leaves in the tree canopy capture (and use) some of the energy arriving from the sun. Less of the energy is released as heat; and the heat is released from many leaves, some of which are high above the ground. So less heat reaches the ground.

A porch provides shady seating.

In contrast, most man-made structures reflect some of the energy (particularly if coated with a reflective coating), but mostly absorb it and release it as heat. You can often feel the heat radiating from a roof or wall on a hot day. So a shady back porch, while cooler than in the sun, is less efficient at releasing heat than is a tree.

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Trees provide cooling shade in the Gardena Willows Wetland Preserve

A second, and more important reason involves a process known as *evaporative cooling*. On a hot day, plants release water (water vapor) into the surrounding air. This increases the humidity around the plant, cooling the surrounding air on hot, dry days. Think of plants as Mother Nature's mist machines – it's the same principle. Evaporative cooling is the main reason why you feel cool when sitting under a tree on a hot day. Of course evaporative cooling works best when the air is dry. On hot humid days, the effects (alas) are less.

Established trees provide maximum shade and cool.

The wisdom of shade trees was well known in past generations. Native inhabitants took advantage of shady groves and forests during the hot months of summer and fall. Early settlers and suburban 'settlers' planted shade trees among their first improvements. Before the era of air conditioning, all Westerners knew the value of a good shade tree. But in some neighborhoods, that wisdom seems to have been lost.

The take home message is clear: if you live in an area that experiences hot, dry conditions you need to invest in large plants, particularly shade trees. Choose those that are water wise – you have lots to choose from, and many large trees require less water than you think. You might get some ideas here: http://mother-natures-backyard.blogspot.com/2015/09/sustainable-gardening-trees-for.html

Blue elderberry provide shady seating.

Choose a tree that gives you something to eat: a citrus tree, another garden fruit tree or a Blue elderberry or native cherry. Or choose a tree/large shrub with other characteristics you like. A tree can provide food, habitat and beauty in addition to shade. Make the most of your space by choosing wisely.

Plant the tree next winter, when the ground is moist and a tree has the best chance of getting off to a good start. Plant it where it will shade your house or provide shady outdoor seating; in our hemisphere, shade is to the north and east of trees. Give your tree some extra water the first 3-4 years after planting. It needs to grow and establish a good root system.

Shade trees help cool a local home.

And then, in 4-5 years or perhaps a little more, you will experience the joys of shade in your own yard. You'll be thankful when you sit outside – or when the electricity goes out during a heat wave. You have planned ahead for the inevitable – more hot days, in pretty much every month of the year, in S. California.

For further reading

http://www.latimes.com/local/cityhall/la-me-climate-health-20160223-story.html

https://weather.com/safety/heat/news/impact-heat-health-20120330

https://www.slideshare.net/cvadheim/climate-change-future-in-gardens-and-preserves-sierra-club-2017

http://research.atmos.ucla.edu/csrl/LA_project_summary.html

http://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/preparing-for-climate-change-impacts-in-los-angeles.pdf

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We welcome your comments (below). You can also send your questions to:
mothernaturesbackyard10@gmail.com

Posted by Mother Natures Backyard at 6:42 AM
Reactions: helpful (0) interesting (0) cool (0)

Labels: climate change, native plant gardening, shade plant, sustainable gardening

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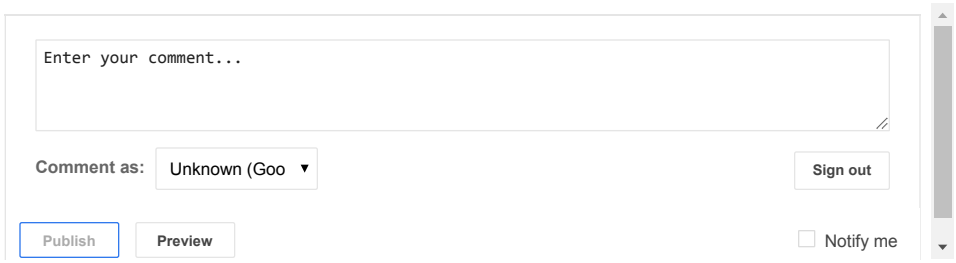

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About Me

Mother Natures Backyard

Mother Nature's Backyard is managed by the Board of the Friends of Gardena Willows Wetland Preserve. Our blogmaster and head gardener is Constance M. Vadheim, native plant gardener/propagator and adjunct Professor of Biology - CSU Dominguez Hills. Dr. Vadheim also teaches a native plant gardening series (see the Friends of Gardena Willows website).

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